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| 10/002,755 | 10/19/2001 | Takashi Aoki | 7217/65719 | 3484 |

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EXAMINER

NATNAEL, PAULOS M

| ART UNIT | PAPER NUMBER |
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| 2614 | |

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/002,755

Applicant(s)

AOKI ET AL.

Examiner

Paulos M. Natnael

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is, closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9, 11 and 12 is/are rejected.
- 7) ☒ Claim(s) 4 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **1-3,5,6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizutani et al. U.S. Patent No. **5,677,738**.

Considering claim **1**, Mizutani et al. discloses the following claimed subject matter, note;

b) wherein a width-to-height ratio of said pixels is set in accordance with a corrective value for achieving a required width-to-height ratio with regard to the picture displayed on said display screen based on a ratio of the number of effective horizontal pixels to a number of effective vertical pixels of frame-unit picture data obtained by converting video signals of a predetermined television system into digital video signals in conformity with a predetermined standard and based on an aspect ratio prescribed by said predetermined television system, is met by the disclosure that "the line conversion ratio setting circuit sets a line conversion ratio R which satisfies an equation: $R=m/k$, based on a width-to-height ratio $1/m$ of each pixel of the first digital video data and a width-to-height ratio $1/k$ of each pixel of second digital video data. The number of

scanning lines converter converts any digital video data having a first number of scanning lines to varied digital video data having a second number of scanning lines, the second number of scanning lines being R-times the first number of scanning lines. The writing controller memorizes the first digital video data into the memory." (see Abstract)

Except for;

a) a display screen formed with matrix-arrayed pixels driven for displaying a picture;

Regarding a), the reference of Mizutani et al does not specifically disclose a matrix-arrayed pixels driven for displaying a picture or an LCD display panel. Mizutani et al however discloses that "the width-to-height ratio (pixel ratio) of each pixel is different between the PC screen of SVGA format or other and the TV screen of NTSC format," (see col. 1, lines 53-65) which clearly indicates or suggests that Mizutani et al. recognize the fact that different types of display devices may be used as needed or desired by the user.

Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Mizutani et al. by providing a matrix-array pixel display or an LCD device, so that the system of Mizutani et al. is made versatile, i.e., is able to utilize any type of display devices without being restricted to a certain type of display monitors.

Considering claim 2, (Amended) the display panel according to claim 1, wherein said corrective value is calculated for equalizing, to said aspect ratio, a ratio of the number of effective horizontal pixels to the number of effective vertical pixels of said frame-unit picture data.

Regarding claim 2, see rejection of claim 1 (b).

Considering claim 3, the display panel according to claim 1, wherein the width-to-height ratio of said pixels is set by changing the width-to-height ratio of each pixel itself to said corrective value, is met by the disclosure that "the line conversion ratio setting circuit sets a line conversion ratio R which satisfies an equation: $R=m/k$, based on a width-to-height ratio $1/m$ of each pixel of the first digital video data and a width-to-height ratio $1/k$ of each pixel of second digital video data..." (see Abstract)

Considering claim 5, (Amended) the display panel according to claim 1, wherein a number of pixels in an effective area of said display screen is determined by an overscan quantity to the frame-unit picture data.

Regarding claim 5, Mizutani et al do not specifically disclose determining the number of pixels in an effective area by the overscan quantity. However, the Examiner here is taking an Official Notice in that it is well known in the television art to determine the number of pixels in the effective display area, i.e., calculating the amount of overscan and, therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Mizutani by providing the well known

capability of determining the effective area of display by the quantity of the overscan that is calculated or determined, so that the number of pixels in the effective area is easily determined by the difference calculated.

Considering claim 6, (Amended) the display panel according to claim 1, wherein said predetermined television system is one of an NTSC, PAL and SECAM system, is met by the NTSC-TV system. (see column 1, lines 45- 49)

3. Claims 7-9,11,12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Admitted Prior Art, (APA, Fig.10B) in view of** Mizutani et al. U.S. Patent No. 5,677,738.

Considering claim 7, Mizutani et al. discloses the following claimed subject matter, note;
a) a decoder for converting video signals of a predetermined television system into field-unit picture data, is met by decoder 121, Fig.10B.

b) a converter for converting the field-unit picture data ...into frame-unit picture data, is met by the IP Converter 123, fig.10B;

Except for;

c) wherein said display panel is structured so that a width-to-height ratio of said pixels is set in accordance with a corrective value calculated based on a ratio of a number of

effective horizontal pixels to a number of effective vertical pixels of the frame-unit picture data obtained from said converter and based on an aspect ratio prescribed by said predetermined television system.

Regarding c), the APA does not specifically disclose a display panel structured so that a width to height ratio of the pixels is set in accordance to a corrective value.

Mizutani et al teaches a video signal converter comprising a line conversion ratio setting circuit where "the line conversion ratio setting circuit sets a line conversion ratio R which satisfies an equation: $R=m/k$, based on a width-to-height ratio $1/m$ of each pixel of the first digital video data and a width-to-height ratio $1/k$ of each pixel of second digital video data. The number of scanning lines converter converts any digital video data having a first number of scanning lines to varied digital video data having a second number of scanning lines, the second number of scanning lines being R -times the first number of scanning lines. The writing controller memorizes the first digital video data into the memory." (see Abstract)

Therefore, it would have been obvious to those with ordinary skill in the art at the time the invention was made to modify the system of the APA by providing the video signal converter circuit of the Mizutani et al, so that the signal is converted properly using a corrective value calculated based on a ratio of a number of effective a first number scanning line pixels to a second number of scanning line pixels in order to prevent the signal from being long (or expanded) in the vertical/height direction.

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Considering claim 8, (Amended) The display device according to claim 7, wherein said corrective value is calculated for equalizing, to said aspect ratio, a ratio of the number of effective horizontal pixels to the number of effective vertical pixels of said frame-unit picture data.

Regarding claim 8, see rejection of claim 7 (c).

Considering claim 9, the display device according to claim 7, wherein the width-to-height ratio of said pixels is set by changing the width-to-height ratio of each pixel itself to said corrective value.

Regarding claim 9, see rejection of claim 7 (c).

Considering claim 11, (Amended) the display device according to claim 7, wherein a number of pixels in an effective area of said display screen is determined by an **overscan quantity** to the frame-unit picture data.

Regarding claim 11, the APA and Mizutani et al as modified above do not specifically disclose determining the number of pixels in an effective area by the overscan quantity. However, the Examiner here is taking an Official Notice in that it is well known in the television art to determine the number of pixels in the effective display area, i.e., calculating the amount of overscan (OS) and, therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system as modified above by providing the well known capability of determining the number of pixels in an effective area of display by the quantity of the overscan that is calculated or

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determined, so that the number of pixels in the effective area is easily determined by the difference calculated.

Considering claim **12**, (Amended) The display device according to claim 7, wherein said predetermined television system is one of an NTSC, PAL and SECAM system, is met by the television signals discussed in the APA and by the MUSE and NTSC TV system disclosed in Mizutani. (see column 1, lines 45- 49)

Allowable Subject Matter

4. Claims **4 and 10** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to disclose a display panel according to claim 1, wherein the width-to-height ratio of said pixels is set by changing a ratio of a horizontal distance between adjacent pixels to a vertical distance therebetween to said corrective value, while the width-to-height ratio of each pixel remains unchanged, as in claim **4 and 10**.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tokoi et al., U.S. Patent No. 6,380,979 discloses a scanning lines converting circuit and interpolation coefficient generating circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (703) 305-0019. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PMN
April 5, 2004


PAULOS M. NATNAEL
PATENT EXAMINER